

Subungual Glomus Tumors: Diagnostic Challenges and Surgical Outcomes in a Two-Case Series

Abel Alejandro Herrera Rodriguez, Elido Aníbal Pérez González

INTRODUCTION:

Glomus tumors are rare, benign vascular neoplasms that arise from the glomus body—a specialized arteriovenous anastomosis involved in thermoregulation. The glomus body is located in the dermoepidermal junction, particularly in the digits, and is composed of an afferent arteriole, the Sucquet-Hoyer canal, and an efferent venule, lacking intermediate capillaries. It regulates peripheral blood flow and temperature¹. The structure's dense innervation and vascular nature contribute to the tumor's hallmark symptoms: cold hypersensitivity, severe paroxysmal pain, point tenderness.

These tumors represent approximately 1% to 5% of all soft tissue tumors of the hand and are particularly prevalent in subungual locations. Most cases occur in females between the third and fifth decades of life

Diagnosis is often delayed due to the tumor's small size and the nonspecific nature of early symptoms, frequently leading to multiple consultations and misdiagnoses, including psychiatric referrals. Imaging modalities such as MRI greatly aid in the detection of these lesions and guide surgical planning. Early recognition and surgical excision are key to definitive treatment and symptom resolution⁵.

METHODS:

We conducted a retrospective case series of two patients diagnosed and treated for chronic subungual glomus tumors at our institution. Clinical history, physical examination findings, imaging studies, surgical technique, histopathological confirmation, and postoperative outcomes were evaluated, with a minimum followup of six months.

Case 1: A 38-year-old female presented with a 17-year history of paroxysmal pain localized to the distal phalanx of the right fifth finger. Symptoms worsened with cold exposure and at night. After multiple evaluations and a psychiatric referral, MRI revealed a well-defined subungual lesion consistent with a glomus tumor. Surgical excision via transungual approach was performed under regional anesthesia. Histopathology confirmed the diagnosis. The patient remained asymptomatic at six-month follow-up.

Case 2: A 50-year-old male reported more than 20 years of persistent pain in the distal phalanx of the left third toe. He had undergone three prior unsuccessful nail surgeries. The pain significantly impaired daily function, and the patient requested amputation. MRI identified a subungual mass consistent with a glomus tumor. Surgical excision using a dorsal approach was performed. Histological analysis confirmed the diagnosis.

RESULTS:

Both patients underwent successful surgical excision of chronic subungual glomus tumors with complete resolution of symptoms and no perioperative complications. Clinical outcomes were evaluated based on pain resolution, nail regrowth, wound healing, and recurrence at six-month follow-up.

Case 1: Postoperative recovery was uneventful. The patient experienced total relief of paroxysmal pain within 48 hours of the procedure. At two-week follow-up, the surgical wound had healed adequately, and she reported restored sleep and tolerance to cold temperatures. At six months, there was no recurrence of pain. Nail regrowth was nearly complete with only mild residual ridging. Functional use of the hand was fully preserved. Histopathologic examination showed a well-circumscribed, encapsulated glomus tumor composed of uniform round cells with eosinophilic cytoplasm and perivascular arrangement.

Case 2: The patient reported immediate relief of chronic pain and cold sensitivity. Follow-up at one month showed proper wound healing without infection or

dehiscence. He resumed his professional activities (transport driver) within three weeks. At six months, he remained asymptomatic, with no evidence of recurrence or need for further intervention. Histological analysis confirmed a glomus tumor with typical features: small vascular channels surrounded by glomus cells and absence of mitotic activity or atypia.

DISCUSSION AND CONCLUSION:

Subungual glomus tumors, though benign and small in size, can cause significant pain and functional impairment. Their diagnosis is often delayed due to nonspecific symptoms and lack of awareness among clinicians. In our series, both patients experienced diagnostic delays exceeding 15 years, highlighting the need for increased clinical suspicion, especially when patients present with localized pain exacerbated by cold exposure without visible deformities.

Magnetic Resonance Imaging (MRI) plays a crucial role in the diagnosis of glomus tumors, offering high sensitivity in detecting small subungual lesions. In both cases, MRI accurately identified the tumors and guided the surgical approach. The transungual and dorsal surgical techniques employed allowed for complete excision with minimal morbidity and excellent cosmetic and functional outcomes.

Histopathological confirmation remains essential to rule out rare malignant variants⁶. No recurrences or complications were noted during the six-month followup, consistent with the high success rates reported in the literature when diagnosis and management are timely.

Interestingly, while subungual tumors are the most recognized form, extradigital variants may present with even greater diagnostic difficulty due to their atypical location and nonspecific symptoms. Rani et al. describe a case of extradigital glomus tumor initially misdiagnosed as a neuroma, emphasizing the importance of considering this entity outside the classic digital presentation⁷. Moreover, emerging literature supports the potential use of high-resolution ultrasound as a complementary diagnostic tool in settings where MRI is unavailable⁸.

These cases underscore the importance of considering glomus tumors in the differential diagnosis of chronic digital pain. Early recognition and appropriate surgical intervention can

Subungual glomus tumors, though rare, should be strongly considered in patients